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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/166,190	10/05/98	HAYES	C

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IM62/1028

EXAMINER

MORRISON, B

ART UNIT

PAPER NUMBER

1724

DATE MAILED:

10/28/99

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

## Office Action Summary

Application No. 09/166,190	Applicant(s) Hayes
Examiner Betsey Morrison	Group Art Unit 1724



Responsive to communication(s) filed on Oct 5, 1998.

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

### Disposition of Claims

Claim(s) 1-23 is/are pending in the application.

Of the above, claim(s) 18-23 is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 1-5, 9-12, and 17 is/are rejected.

Claim(s) 6-8 and 13-16 is/are objected to.

Claims 1-23 are subject to restriction or election requirement.

### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit:

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-17, drawn to a method for treating water with ozone, classified in class 210, subclass 760.
  - II. Claims 18-23, drawn to a water treatment system, classified in class 210, subclass 205.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the system can be used to practice a materially different process, such as a process for injecting a biological sludge with gas nutrients.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. Larry Coats on October 12, 1999 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-23 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Art Unit:

5. The abstract of the disclosure is objected to because it is longer than 250 words.

Correction is required. See MPEP § 608.01(b).

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagahiro et al.

(abstract; column 4, lines 18-43; column 6, lines 29-37, line 59-column 7, line 2, lines 40-44; column 26, lines 40-57). Nagahiro et al. teach a method for producing a high concentration ozone water solution, comprising pumping raw water into a tank, pressurizing the water in the tank at a pressure that is greater than atmospheric pressure, circulating the water from the tank by a pump that increases the pressure of the water, passing the water through gas nozzle(s) where ozone is injected into the water, returning the ozonated water to the tank, and discharging the treated water from the tank. It is submitted that the step of pumping water inherently pressurizes the water entering the tank. It is also submitted that when the water is pressurized by the pump in the circulation loop, the water is inherently boosted to a pressure greater than that of the water in the tank as it passes through the gas nozzle and thus, there is a pressure differential across the injector.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5, 9-12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahiro et al. Nagahiro et al. disclose the method described above. Table 1 of Nagahiro et al. discloses that uses of the ozonated water include drinking water for pig raising and poultry farming, which suggests that the ozonated water is directed to an animal watering area. In the method of Nagahiro et al., water leaving the pump in the circulation loop is adjusted by a valve. The circulation loop also includes a bypass line, through which water can be circulated back to the tank and then to the inlet to the pump in the circulation loop again. This by-pass line includes a pressure control valve. It is inherent that using this by-pass line varies or adjusts the pressure between the booster pump and the ozone injection nozzle.

The claim differs from Nagahiro et al. by reciting that the pressure of water is boosted to approximately 15% greater than the pressure of water in the tank (claim 5), that the water pumped from the tank is pressurized relative to the pressure of water in the tank (claim 9).

However, one of ordinary skill in the art would have been expected to have arrived at the optimum pressure increase for the circulating water in the method of Nagahiro et al. by routine experimentation. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the present invention was made, to have increased the pressure of the water relative to the water pressure in the tank, or by 15%, by the pump in the circulation loop of Nagahiro et al.,

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depending on the specific pressure desired for ozone injection, absent a sufficient showing of unexpected results.

10. Claims 6-8, and 13-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

Claims 6-8 would be allowable if rewritten in independent form, including all of the limitations of claims 1 and 3-5, because the prior art of record fails to teach, disclose, or fairly suggest a method for ozonating water comprising sensing a flow of water from a pressurized water source that flows to an ozone treatment tank and actuating a booster pump in a circulation loop in response to this flow, in combination with all of the other limitations of claims 1 and 3-5.

Claims 13 and 14 would be allowable if rewritten in independent form, including all of the limitations of claim 9, because the prior art of record fails to teach, disclose, or fairly suggest a method for ozonating water comprising a flow switch interposed between the tank and the water source wherein a pump in a circulation line is actuated in response to the flow switch which is actuated by water being directed from the source to the tank, in combination with all of the other limitations of claim 9.

Claims 15 and 16 would be allowable if rewritten in independent form, including all of the limitations of claim 9, because the prior art of record fails to teach, disclose, or fairly suggest a method for ozonating water comprising flowing ozonated water back into a tank from a

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recirculation loop at a pressure that is approximately equal to the pressure of water in the tank, in combination with all of the other limitations of claim 9.

12. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsey Morrison whose telephone number is (703) 305-3934. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6:00 PM, and on alternate Fridays from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. David Simmons, can be reached at (703) 308-1972. The fax phone number for official after final faxes for this Group is (703)305-3599, for all other official faxes the number is (703)305-7718, and for unofficial faxes the number is (703) 305-3602.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.



David A. Simmons  
Supervisory Patent Examiner  
Technology Center 1600

*BGM*  
B. Morrison  
October 21, 1999